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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,194	12/20/2001	George Michael Hey	2705-203	4905

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EXAMINER
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BHATIA, NEERAJ R

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/032,194

Applicant(s)

HEY, GEORGE MICHAEL

Examiner

Neeraj Bhatia

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-13, 15-17, 21, 22, 24-31, 34, 35, 37-44, 47, 48 and 50-57 is/are allowed.
- 6) ☒ Claim(s) 1-3, 14, 18-20, 23, 32, 33, 36, 45, 46 and 49 is/are rejected.
- 7) ☒ Claim(s) 4-13, 15-17, 21, 22, 24-31, 34, 35, 37-44, 47, 48 and 50-57 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 14, 19, 20, 32, 33, 45 and 46 rejected under 35 U.S.C. 102(e) as being anticipated by Umayabashi.

With respect to claims 1, 19, 32 and 45, Umayabashi (Patent No 6,747,990) discloses a system (controller) Fig 3 for controlling buffers 801 in a plurality of terminal side apparatus 800-830. The terminal apparatus receive time slot allocations (channel values) (column 9 line 64 – column 10 line 3) from a network side apparatus 840 according to the Queue lengths, which are equivalent to the number of stored cells in the buffers. The system uses the Necessary Buffer Capacity Reduction Type Time Slot Allocation Control Function 141 to allocate these time slots according to the Queue length in attempt to keep the value, Queue length – number of time slots allocated, as constant as possible (column 10 line 41 - column 11 line 8 and Fig 4). By keeping this value constant, the system reduces necessary buffer capacity by preventing buffers with short Queue lengths from getting too many time slots allocated to them, and preventing buffers with long Queue lengths from getting an insufficient amount of time slots

allocated to them, which would cause the Queue length to increase, thereby increasing the necessary buffer capacity (column 2 line 62 – column 3 line 2). Also, it is noted that when the object terminal side apparatus for allocation are limited to the terminal side apparatus having the buffer of long Queue lengths, time slots are allocated only to the terminal devices having long Queue lengths (column 14 lines 60-63).

With regards to claim 14, Umayabashi discloses a system for controlling buffers as stated above that is used in a network routing or switching circuitry used to transfer packets between different endpoints, the definition of a network processing circuit in the applicant's disclosure.

Regarding claims 20, 33, and 46, Umayabashi discloses a system for controlling buffers as stated above, which would have a different necessary buffer capacity depending on the number of time slots assigned to each buffer (column 2 line 59 – column 3 line 12).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 23, 36 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umayabashi.

With respect to claims 2, 23, 36, and 49 Umayabashi discloses a system for controlling a buffer, which has a necessary buffer capacity used for enabling read or write operations. It would have been obvious to one skilled in the art at the time of the invention to include a TDM switch output enable signal for controlling the read or write operation in Umayabashi in order to provide a method of putting multiple data streams in a single signal by separating the signal into many segments therefore making the system capable of allocating time slots to each buffer and to provide a method of controlling when to read or write according to a specified value.

5. Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umayabashi in view of Redington.

With regards to claim 3, Umayabashi discloses a system controlling a buffer comprising all that is in claim 1, but does not disclose a method including a least significant bit disabling the read or write operation for a least significant bit for each time slot in the TDM data stream. However, Redington (Pub No US2002/0126689) discloses a method using robbed bit signaling, where signaling information is periodically placed in the least significant bit (third paragraph of Background). It would have been obvious to one skilled in the art at the time of the invention to use Robbed Bit Signaling in Umayabashi in order to control the read or write operations and causing the least error by using the least significant bit.

Regarding claim 18, Umayabashi discloses a system for controlling a buffer as stated above which uses a TDM data stream. Redington discloses a method using a digital transmission media such as T1 or E1 (abstract). It would have been obvious to

one skilled in the art at the time of the invention to use in Umayabashi a T1 or E1 data stream as the TDM data stream in order to send 24 or 32 channels of data at 125 microseconds a frame. Also note, the 24 or 32 channel frames (DS1 frames) in T1 or E1 consist of 24 or 32 DS0 channels.

### ***Allowable Subject Matter***

6. Claims 4-13, 15-17, 21, 22, 24-31, 34, 35, 37-44, 47, 48, 50-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Blum (Pub No US 2003/0048772) discloses a communication system architecture including robbed bit signaling in a DS0 channel of a T1 or E1 line. Au (Patent No 6,445,635) discloses a state machine including an output signal representing an Almost Empty output flag or a Not Almost Empty output flag.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neeraj Bhatia whose telephone number is (571)272-5204. The examiner can normally be reached on Monday through Friday: 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571)272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
NB

  
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